

CA to F, and make EF=EB: through F draw FG || to AB, and L to CF: make FG=AF, and through G draw GH || to FAC.

The line AB will be cut in medial section in H, or cut so that the rectangle AB, BH = square of AH. In the figure, CF will be equal to the line composed of the line AB, and the larger segment AH, for AC is one side of the square on AB, and AF is one side of the square on AH, and it will be cut in medial section in the point A; for since CA is bisected in E, and produced to F (by Prop. VI. Book II.), the rectangle



$$\begin{aligned} CF, FA + EA^2 &= EF^2 \\ &= EA^2 + AB^2 \\ &= EA^2 + AC^2. \end{aligned}$$

Take away EA², which is common to both, and rectangle CF, FA = AC²; hence the line CF, composed of the lines CA = AB, and AF = AH, the larger segment of AB is cut in medial section in the point A, which was to be done.

This may be also shown in another way:—

Let a = line AB.

b = larger segment AH.

c = smaller segment BH.

Then ac = b².

Again, let a' = line CF, or = a + b.

b' = segment AC, or = a.

c' = segment AF, or = b.

Then, also, a'c' = b'².

or, a'c' - b'² = 0.

For a'c' - b'² = (a + b)b - a²

= ab + b² - a².

= ab + ac - a².

= (b + c)b + (b + c)c - (b + c)².

= b² + bc + bc + c² - b² - 2bc - c².

= 0. J. Y.

THE LATE MR. HAVILAND, ARCHITECT, OF AMERICA.

MR. JOHN HAVILAND, distinguished in America as a "prison architect," died in April last. Mr. Haviland was born in England in 1792, and was connected, on his mother's side, with the late Mr. B. R. Haydon, the artist. He settled early in America, and his first design was for a penitentiary at Pittsburgh on the "radiating plan," not then adopted. Subsequently he designed and built the Eastern Penitentiary, at Cherry-hill, the first penal building erected upon the radiating plan. After this Mr. Haviland was throughout his life, whenever occasion demanded, engaged in prison structures. The Governments of France, Prussia, England, and Russia, each sent commissioners to America, it is said, to examine his prisons, and to obtain designs from him.

Among Mr. Haviland's many designs and works, the *National Intelligencer* (U. S.) mentions the United States Naval Asylum, at Norfolk; the Western Penitentiary, at Pittsburgh; the New Jersey, Missouri, and Rhode Island State Penitentiaries; the Alleghany, Lancaster, Berks, and many other jails; the Deaf and Dumb Asylum, at Philadelphia; the State Insane Hospital, Harrisburgh; the United States Mint, at Philadelphia; County Halls of Newark, York, and other places; and numerous churches and private mansions. He received the first premium for a design for the New York Exchange. One of the last of Mr. Haviland's plans was that of Brown's Hotel, just erected at Washington. He was a corresponding member of the Institute of British Architects, and appears to have been much respected in Philadelphia, where he resided.

INDUSTRIAL AND PROVIDENT PARTNERSHIPS.—The Bill, as amended by the Select Committee of the House of Commons, was printed on Friday, to legalise the formation of industrial and provident partnerships. As amended there are 14 clauses in the Bill. The object of it is to enable societies of working men to attain the points of the Friendly Societies' Acts by means of joint trades.

THE (R.C.) CHURCH OF ST. MARY MAGDALEN, MORTLAKE.



THE (R. C.) CHURCH OF ST. MARY MAGDALEN, MORTLAKE, SURREY.

This little church is erected upon ground immediately adjoining the parish church (an ugly re-erection in the square style) of Mortlake and the railway station. Its plan is a short parallelogram, with north porch, the chancel being taken off the east end of nave, with side chapel and sacristy, over which is the organ chamber. It is in the "Decorated," or second pointed style, with geometric tracery. The tower, with spire, rises from the south-west angle, over the doorway of which is a handsome niche, with figure of St. Mary Magdalen. The interior is divided into nave and aisles by two rows of pillars, alternately round and octangular. The chancel is elevated three steps above the nave, and the altar on three more. There are sedilia and credence. The roofs are open, and of simple construction. The internal dimensions are 78 feet long by 47 feet wide. The church is faced with Kentish rag, and the stone employed for windows, doorways, and dressings, is the best Bath. The architect is Mr. Gilbert R. Blount, and the builders are Messrs. Smith and Appleford. The cost of the building, which will accommodate 500 worshippers, has been 3,000*l.*, defrayed by public subscriptions, greatly assisted by the Lady Mostyn, of Portobello House, and her excellent family. W.

DEATH OF THE CHAIRMAN OF THE METROPOLITAN COMMISSION OF SEWERS.

THE work of the Metropolitan Commission of Sewers devolved mainly upon three gentlemen,—Mr. Edward Lawes, the chairman, Mr. Allason, the architect, and Mr. Frank Forster, the engineer. Others gave only occasional or incidental attendance. The two principal paid officers, the chairman and the engineer, worked anxiously *de die in diem*. Mr. Allason was as anxious, and he worked with them incessantly, until a day or two before his death.

They had all three the promise of a long life before their entrance into office, and now, after a short career, their existence has been closed by nervous fevers.

Those few persons who may be aware of what it is to have the responsibility of dealing with large evils, with imperfect means, and to contend against vexatious obstructions, will fully appreciate the fatal influence of the mental anxieties which are the antecedents of the diseases which terminated their lives.

An engineer, who knew Mr. Frank Forster intimately, said, on hearing of his appointment to his office of engineer to that commission,—"That appointment is a fatal mistake. I know well the susceptible nature of his mind. Now mark me; the opposition which he will there encounter will kill him. You will soon hear of his being in a nervous fever; and unless he is rescued he will be killed." The nervous fever came as was predicted, and Mr. Forster resigned too late. Mr. Roe, the previous engineer, who had been a veteran, was also attacked with a nervous fever, produced by the anxieties and the worry of the office, and he was compelled to resign, and has been slowly recovering between two or three years the effect of the service during one.

The health of Mr. Austin, the first engineer of the consolidated commission, was falling rapidly, though he is a younger man, under service with imperfect support, but his friends interfered and rescued him in time. When the removal of the technical difficulties which impeded the borrowing of the money necessary to proceed with large amended works was refused, and when, moreover, such a restriction was allowed to be placed on the powers of the commission for borrowing money, as threw them into debt, the chairman was subjected to accumulated anxieties. It became necessary to dismiss officers who had been specially trained, and who were prepared for large service. Then reclamations were showered upon the commissioners, implying blame for penitences which they had no means to prevent. To meet the public demands with reduced means, Mr. Lawes, the chairman, undertook recently the responsibility of looking into every report and order for the drainage of every single house—a step which betokened a state of anxiety, and which well-informed friends would have prevented him taking (as it was a duty previously well despatched by subordinate officers), or indeed for taking the office at all. The prediction in this case also, was too speedily verified. Though the causes of disease were similar, they fell upon frames differently constituted, and weakened in different ways, giving the appearances of different forms of mortality; but the potency of the causes were distinctly foreseen in the case of Mr. Lawes as well as of Mr. Forster. When a gentleman, who had had experience in the commission (and had himself withdrawn from it), heard of the proceeding of Mr. Lawes, he confidently predicted that he